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DPS-6332
Copy 1 of 7

19 December 1958

MEMORANDUM FOR : Deputy Director, DPS/DCI

SUBJECT : Memorandum from Mr. Bissell (TCS-4165-58) and Attachments from PIC

1. Approximately two years ago, attempts were commenced to obtain focal lengths, lock and skew angles, etc. on all Project cameras to provide information required for geodetic control purposes. This problem was complicated by the fact that both the A-2 and B cameras were designed for reconnaissance purposes and could not be readily calibrated to provide this information. Due to variation in focal lengths, discrepancies involved in changes in configurations between flights (i.e., changing film magazines, platens, camera body, etc.), it was decided to be impracticable to rely on this data as information would not remain consistant.

2. ACIC's need for camera data on which to base geodetic control computations is well recognized. PIC also has a requirement for such data to increase accuracy of measurements from aerial photography. To provide an alternative means of obtaining required data, the following procedures were implemented and are now in effect:

A. Approximately 18 months ago, Project Operations advised the Detachments to obtain, where possible and practicable, photography of the home base (air field) upon completion of each operational mission. This photography, of an area of known or readily accessible geodetic control data, permits PIC to reconstruct geometry of camera systems used on operational missions, thereby improving mensuration accuracy. This system is, of course, limited by terminal weather conditions and the amount of film remaining after targets are covered.

B. A second method consists of a series of stellar exposures (star shots) taken from the ground. Knowing the position of the various constellations at a given time, PIC, by a rather complicated and involved procedure, can also construct camera system geometry.

SECRET

3. As the above indicates, the problem is recognized and systems have been devised to provide certain geodetic control data. However, it would be both impracticable and unfeasible to attempt to recover control data from early CHALICE missions to satisfy ACIC's requirement. On most operational missions accomplished during past year and on future operational missions this data is, or will be, available for both ACIC and PIC. It should be reiterated, however, that since we are attempting to make a reconnaissance system perform a function usually associated with calibrating mapping cameras, the accuracy and amount of geodetic control information obtained will vary.

4. We agree completely with Mr. Bissell's memorandum and recommend that the memorandum and attachments be forwarded to Mr. Lundahl.

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Distribution:

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2 - SA/PD/DCI

3 - Dir.D&P, DPS

4 - OPS, DPS

5 [redacted] 25X1A9a

6 - Mr. Lundahl, PIC

7 - Chrono, DPS